



Catching malaria.

On the world's newest malaria map, dark red indicates the greatest risk of disease.

Credit: Malaria Atlas Project and *PLoS Medicine*

New Map for Malaria

By Elsa Youngsteadt
ScienceNOW Daily News
26 February 2008

About \$1 billion a year goes into malaria treatment and prevention, but is the money hitting the best targets? Today, researchers released a detailed map of global malaria risk, and it shows that some at-risk countries are getting less investment per capita than others. Public health experts hope the new information will help them realign their malaria-eradication efforts to better meet the threat.

Malaria, a mosquito-borne disease caused by the parasite *Plasmodium falciparum*, infects some 500 million people each year and kills 1 million of them. Sub-Saharan Africa is by far the most severely affected area, but comprehensive data on a global scale are lacking. The most recent world map of malaria was created in 1968, and funding agencies today are left guessing where their dollars are needed most. In 2006, the Wellcome Trust in the United Kingdom and institutions based around the world launched the Malaria Atlas Project (MAP) to map, model, and predict global malaria risk.

MAP researchers compiled data on malaria incidence reported by countries and research groups from

2002 through 2006, as well as climate data such as temperature and aridity that limit malaria transmission. The researchers then converted this information into regional and global maps showing where the current risk of malaria transmission is highest. The map estimates that 2.37 billion people--35% of the world's population--have some risk of acquiring malaria. That diminishes previous risk estimates of 46% and 48% in 1994 and 2002, respectively. One billion people live in high-risk areas, and the infection rates outside of Africa were less than 5%, the group reports online today in *PLoS Medicine*.

The map highlights some disparities between risk and funding, says epidemiologist Carlos Guerra of the University of Oxford, U.K., who led the study. For example, the at-risk populations in Southeast Asia and Africa receive less funding per capita than people living in lower risk regions such as the South American country of Suriname. Guerra applauds rapid progress in South America but says the current per capita funds simply aren't enough to meet eradication goals and argues that money needs to be re-allocated to areas where malaria is "a huge problem."

The mapping results aren't surprising but are unprecedented in their precision, says malaria biologist Dyann Wirth of the Harvard School of Public Health in Boston, who was not involved in the project. The work signals a "maturation" in the field of malaria research and provides an important baseline in determining the success of future malaria interventions, she says.